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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,698	08/23/2001	Sashiro Uemura	96790p375	1775

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EXAMINER

GUHARAY, KARABI

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/938,698	UEMURA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Karabi Guharay	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 13 September 2004.

2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) 2,4,5 and 9-17 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) ☒ Claim(s) 9,10,12 and 13 is/are allowed.

6) ☒ Claim(s) 2,4,5,11 and 14-17 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All    b) ☐ Some \*    c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>9/03/03 &amp; 9/29/03</u> .	6) <input type="checkbox"/> Other: _____

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Amendment, filed on 13 September 2004 has been considered and entered.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11 & 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 11 & 16 recite the limitation "the cylindrical-shaped bottom". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 5, 11, 14, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norihiro (JP 2000-156185), in view of Kobayashi (US 4568852).

Regarding claims 2 & 5, Norihiro discloses a vacuum fluorescent display (cathode ray tube) having an envelope (6 of Fig 1), though Norihiro does not specifically

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mention, a cathode ray tube inherently comprises a cathode electrode for emitting electrons a grid electrode for extracting the electrons and an anode and a phosphor screen on the inner surface of the faceplate of the envelope and further discloses a cap (10) supported outside the envelope so as to surround the display portion (front surface panel 4, Fig 1) through a gap, said cap having a light exit surface from which the light emitted from said phosphor layer emerges through the display portion of said envelope, a cylindrical-shaped bottom (20) to cover the display portion of the envelope and a front side surface of the envelope through the gap, a cooling liquid sealed in the gap (12).

However, Norihiro does not disclose that the cap is made of lead glass having light transmission properties.

However, Kobayashi discloses a cathode ray tube with coolant and reduced X-ray emission (see lines 25-44 on column 1, line 52 on column 3 to line 34 on column 4, Fig. 2,3) comprising a cap 19 made of lead glass (see lines 10-34 of column 5 ) having a large X-ray absorption coefficient and supported outside a first glass panel 15 so as to surround the display portion of said first glass panel 15 through a gap 18, said second glass panel 19 having a light exit surface from which the light emitted from said phosphor layer 16 emerges through the display portion of said first glass panel 15, in order to prevent X-ray leakage and blackening phenomenon caused by overheat of the phosphor layer .

Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to use lead glass for the cap of Norihiro's device since this will

prevent x0ray leakage from the CRT and also reduce the blackening phenomena caused by over heating of phosphor screen.

Regarding claims 11 & 16, Norihiro discloses that the envelope (6) comprises a cylindrical glass bulb, a circular plate (4) fixed to a front surface opening of a glass valve and a glass stem (a narrow portion of the envelope).

Regarding claims 14 & 17, Norihiro discloses that the envelope is cylindrical shaped and at least 1/3 of the region of the front side of the envelope is covered by the cap (see Fig 1).

Claims 4 & 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norihiro & Kobayashi as applied to claims 2 & 5 above, and further in view of Umera et al. (US 6239547).

Regarding claims 4 & 15, Norihiro & Kobayashi disclose all the limitations of the claims 4 & 15 except for the limitation of cathode electrode containing carbon nanotubes.

However, Umera teaches that that use of carbon nanotube for the electron emitter of a vacuum fluorescent display provides several advantages, such as carbon nano-tube emitters can emit large number of electrons and can be easily manufactured (lines 45-53 of column 2).

Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate cathode electrode containing carbon nano-tube, as taught by Umera, since this will provide better emission of electrons.

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***Allowable Subject Matter***

Claims 9-10, & 12-13 are allowed over the prior art of record.

Reasons for allowance have been presented in previous office action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (571) 272-2452. The examiner can normally be reached on Monday-Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Karabi Guharay*  
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Art Unit 2879